SECTION 4

PROPOSED ENVIRONMENT

4.1. California Integrated Information Network (CIIN) Vision

The California Integrated Information Network (CIIN) is a vision for the state government's networking infrastructure for today and into the next century. CIIN will ultimately replace the current environment of independent, heterogeneous, state-owned, and resource intensive telecommunications organizations with an integrated, flexible, and efficient statewide network relying to the greatest extent feasible on contractor-owned and contractor-operated infrastructure and the competitive acquisition of management, operations, and service delivery. The new telecommunications environment will be designed to address the business problems of state agencies and will provide for modernization of the infrastructure and rapid deployment of new technologies to meet the state's ever-increasing telecommunications demands.

The above is an excerpt from the California Integrated Information Network document, dated December 1996, jointly issued by the Department of Information Technology (DOIT) and the Department of General Services,(DGS). A complete copy of the document may be obtained from the Internet at www.doit.ca.gov.

4.2. Overview of Proposed Environment

In accordance with the CIIN document, DGS/TD plans to move towards a new environment through a short-term effort to consolidate state telecommunications services on the existing state infrastructure and current consolidated service contracts. The purpose of the future RFP is to effect the long term plan to migrate consolidated state telecommunications services to a fully contractor-owned and contractor-operated infrastructure.

4.2.1. Short-term

The short-term plan is to maximize the use of the state's existing CALNET infrastructure. This will improve the cost effectiveness of the current network while increasing and consolidating the customer base that will be offered to the private sector. The specific short-term tasks already underway include:

- Converting the InterLATA transport over to a newly awarded contract to reduce existing expenses.
- Identifying approximately 37 million annual minutes of state voice traffic and moving the traffic onto CALNET.

- Consolidating the various networks operated by state agencies through the aggregation of independent InterLATA transmission facilities to common shared transport facilities.
- Migrating existing data network transport facilities to frame relay technology, at expected savings to the state.

4.2.2. Long-Term

The long-term plan for state telecommunications services will move California from a model of state-owned and operated, redundant networks to an integrated, privately owned and operated network.

The long-term plan calls for a new competitively obtained statewide contract from a private sector prime contractor to supply telecommunications services to California state government for a time certain period. The new model for telecommunications must show an immediate reduction in overall costs to the state.

The key features are:

- The public/private partnership with partnership protection.
- State customer base offered.
- The consolidation of the state's telecommunications buying power through central management.
- Elimination of state owned network infrastructures and their associated debt as a condition to the award.
- Telecommunications services provided by the private sector contractor from order desk to billing.
- Operation, maintenance and network management functions will be provided by the private sector contractor.
- State will require continued lowest price analysis of rates.
- DGS/TD will exercise statewide management and oversight of obtained services.
- DGS/TD will have sophisticated network monitoring capabilities provided by the contractor.
- DGS/TD will perform a strong customer advocate role to ensure that the private sector contractor continuously provides responsive service to state agencies.
- DGS/TD will provide contract management to monitor adherence to terms and conditions and validate cost effectiveness of the private sector telecommunications contract.

4.3. Required Network Services

The State has requirements for a broad range of network, line side, data, and other telecommunications services. DGS/TD expects the contractor to provide the services described in Section 3.

For voice network services the contractor shall offer rate plans based on both dedicated and switched access to their network where appropriate. Where traffic volumes warrant and dedicated access is cost effective, contractor shall be responsible for ordering, installing, maintaining and billing access circuits as well as usage for the service provided.

The following lists are representative of the types of telecommunications services required:

4.3.1. Voice Network Services

Section 3 defined the present voice network services offered by DGS/TD. At a minimum, DGS/TD is seeking the same range and level of service as well as the services described below:

4.3.1.1.Long Distance Calling

The long distance services shall consist of IntraLATA long distance, InterLATA IntraState, InterState, and International calling.

4.3.1.1.1. Disaster Readiness

The state presently enjoys the flexibility and control of a private voice network. During disaster situations the public switched network may experience restrictions that prevent callers from contacting parties in the affected area. In the same situation CALNET users are not restricted from access in those areas. State employees are able to use CALNET to coordinate disaster relief from any CALDEX location, conference with engineers in Sacramento to assess the integrity of buildings, and to coordinate the relocation of state staff into new facilities for continued support of the public in the area. DGS/TD is seeking a service that provides the state with similar, controls and flexibility found in private networks.

4.3.1.1.2.Call Volumes

The service shall be engineered to process no less than 215,000,000 minutes of calling in any one continuous year. The service shall be designed to accommodate a growth of not less than ten percent (10%) per year with a defined

procedure to expand beyond this level if required to meet the demand of the state.

4.3.1.1.3.Call Setup Time

For all calls completed within California, the time between the last digit dialed and the start of ringing at the terminating Central Office shall not exceed 3 seconds. Excluded from this requirement will be all agency locations directly terminated to the service using non PRI trunking.

4.3.1.1.4.Call Blocking

During the busiest hour of the busiest day no more than three percent (3%) of the calls will experience a service blockage or service busy condition. The monthly average blockage for all calls during the state business day (M-F, 8-5) shall not exceed one percent (1%).

4.3.1.2.Long Distance Access

Agency access to the long distance service shall be obtained through one of two methods. The service shall allow for either switched access using presubscription (Feature Group D) or direct dedicated access. The contractor shall work closely with the agency to determine what method is best for their specific situation.

For low volume users it is generally recommended that they presubscribe to the long distance service and use Feature Group D trunks for accessing the long distance network. For Centrex/CentraNet and PBX users, it is more likely that a direct trunk connection into the long distance network will be recommended. The primary determining factor shall be the bottom line cost to the state for the service.

4.3.1.2.1.Termination Types

The contractor shall offer various types of direct dedicated access arrangements for agency equipment. Some equipment may require analog termination, some may use a direct T-1 digital termination (DDI), and others may use a PRI termination. The contractor shall offer all of these and be prepared to offer others as the technology changes and new standards are introduced.

4.3.1.3.Advanced Intelligent Network Services

The contractor shall provide Advanced Intelligent Network (AIN) services for state use as defined in Bellcore literature.

4.3.1.4.Toll Free Services

The contractor shall provide toll free services, 800 and 888 on a nationwide basis. The services shall provide the users at a minimum with routing based on originating location (telephone number), day, and time of day.

The contractor is expected to provide the requesting agency with extensive management reports identifying call volumes by originating location and by terminating location.

4.3.1.5.900/700 Services

The contractor shall provide 900/700 type services for agency use.

4.3.1.6.Calling Card

Also included shall be Calling Card services. State agency staff shall dial into the service, enter an authorization number and place a calling card type call from anywhere within the world where service agreements exist between the United States and the foreign countries for telephone service. The contractor shall provide the following services:

- Magnetic Strip for authorization information
- Customized Logo Cards for each requesting agency
- Prepaid card functioning like a debit card where usage is paid in advance.
- Restricted cards limiting access by terminating location, day, time of day, or user defined permitted calls depending on user requirements.
- Ability to place multiple calls without reentering an authorization number.

4.3.1.7.Teleconferencing

4.3.1.7.1.Audio

The contractor shall provide audio teleconferencing. Basic audio conferencing on local consolidated services shall be provided as a standard feature. These shall consist of three way conferencing, six port conferencing, 30 port meet-me

conference bridge and preset conferencing up to 25 predesignated conferees.

For those users with specific needs not met by standard conferencing, the contractor shall offer additional conferencing options such as:

- Operator dialed--A specialist calls each participant prior to the start of the teleconference.
- Dial-in--Also known as "Meet-Me" service, participants (up to 90) dial a pre established number to join the conference call.
- Mixed mode--This feature combines operator dialed and dial-in options to meet individual needs.
- Broadcast--Participants are in a listen-only mode.
- Roll call--Establishes who is present on the call.
- Recording-Provides a record of the teleconference on audio cassette.
- Transcription--Provides a written document of the recorded teleconference.
- Translation Service--Provides an on-line translator.
- Security ID--Participants use a security code to prevent unauthorized participation in teleconference.

4.3.1.7.2.Video

Video teleconferencing shall be available through the contractor to meet the various needs of state users. Most agencies use either switched services or dedicated video conferencing. Switched services are predominantly provided using standard ISDN dial up lines and inverse multiplexing to provide the necessary bandwidth. Dedicated video conferencing in the state uses fixed bandwidth from the agency to the contractors service for connections to other locations using a preset arrangement with the contractor. Although it is referred to as dedicated access, the arrangement is flexible to allow connections to other video conferencing networks outside of the contractors service. The contractor shall provide for multiple simultaneous connections on a bridge and the necessary protocol conversions for connecting dissimilar equipment.

4.3.1.8. Internet Access

The contractor shall provide the state users with support for Internet. This includes access to the Internet, addressing, and domain support. The access shall be available in either dedicated access up to and including 45 MBPS or dial-up. It is expected that the dial up arrangement will include ISDN at 56KBPS, 64KBPS and 128KBPS.

4.3.2. Line Side Services

The contractor shall provide line side telephone services, also referred to as class 5 services, on a statewide basis to be jointly used by multiple agencies. The services shall include basic, enhanced business and ISDN line services as standard offerings.

DGS/TD is seeking solutions that provide the least cost to the state while providing government users with the greatest feature flexibility. The contractor should provide a flexible pricing option for services to allow users the choice of low cost basic services or more sophisticated feature rich services.

In the major metropolitan areas where DGS/TD manages consolidated services, or provides CALDEX service, the contractor would be expected to provide similar services. The contractor must deliver a service that minimizes the cost for calling between state users within the same community. The contractor must also provide a suite of features similar to those available on Centrex or CentraNet services presently available from Pacific Bell and GTE respectively.

In addition to the standard Centrex/CentraNet features, the state requires ACD, ACD/MIS, CLASS, statewide Centex features, and automated user controlled moves and changes.

4.3.2.1. Voice Processing Services

The contractor is required to provide voice processing services on a statewide basis. The level of service may vary according to the quantity of potential users in a particular location. It is expected that in consolidated locations the following minimum set of services will be provided:

- **Voice Mail** - The capability for users to have callers leave a message to be retrieved at a later time. The user may also send messages to other users of the voice mail system. The service should offer a variety of message length capabilities, greeting and delivery options, broadcast messaging, ability to revert to an attendant and outcalling for paging.

- **Interactive Voice Response** - A voice processing application that gives callers specific information or accepts an order based on specific information input by callers from their touchtone telephone. One example would be a bank account query.
- **Automated Attendant** - A service that automatically answers incoming calls within a predefined number of rings, without assistance from live attendant. It then allows callers to reach an extension by prompting the caller to enter the extension number or name, or offers other services, such as announcements for voice menu choices. An automated attendant can process multiple calls simultaneously. It prompts callers with a series of choices and actions to perform. Based on selected action, the caller may listen to a recorded announcement, leave a message, place a call, activate another voice service or be routed to a particular service.
- **Voice Forms** - Applications that allow business users to collect information from callers over the telephone. A series of questions is played to a caller who responds to each question in sequential order. Once the information is collected, it can be retrieved and transcribed to suit individual requirements.
- **FAX on Demand** - A multimedia option which allows the user to create and retrieve FAX information by selecting FAX items from a voice menu. FAX information can be sent to the caller on the same call or the caller is prompted for a callback number to which the FAX can be sent after the call has been disconnected.

4.3.2.2.Call Center Services

The services shall support call center applications to include:

- **Automatic Call Distribution (ACD)** - This service enables agencies to efficiently handle large volumes of incoming calls by distributing them equitably through station lines to a designated group of answering positions or agents. A variety of standard and optional ACD group, agent and supervisor features are available to meet the specific needs of the individual call center. An electronic business or agent set is generally required to access ACD features.
- **Announcements/Music in Queue** - The service offers standard and/or customized announcements to be heard by callers at predefined intervals while calls are in queue. The system also offers an option for music to be played before, after or in lieu of announcements.

- **Management Information System (MIS)** - This service provides real-time ACD monitoring and comprehensive historical reporting for active call centers. It provides up-to-the-minute call center performance evaluation data and historical reporting for in-depth analysis of the call center's overall performance and for projecting future trends. The statistics allow the manager to monitor changing ACD traffic loads and levels of service and make adjustments to various ACD group and agent parameters using a management terminal.

- **Computer Interface** - This feature is referred to on Northern Telecom systems as CompuCall. CompuCall employs the Switch Computer Application Interface (SCAI) open architecture standard to connect the central office switch with the customers' general-purpose business computers for the exchange of information to enhance call processing. The CompuCall feature functionality does not work independently but is highly dependent upon the customer's business application software. Representative CompuCall applications are:

  Coordinated Voice and Data - Provides an agent a screen of information about a caller concurrently with receipt of call.

  Voice Processing Integration - Uses interactive voice response systems and voice response units to obtain additional information about callers and direct them to the appropriate agent.

  Third Party Control - Allows agents to control calls, such as holding, consulting, transferring and conferencing all through their computer keyboard commands.

- **Intelligent Call Routing** - A network solution that provides call-by-call routing of toll free calls to multiple, geographically dispersed ACD groups to create a virtual call center network for load balancing and maximizing use of available agents. The service performs ACD-like call routing and consolidation of management information at the network level, thus creating enterprise-wide call distribution capabilities. The service offers features such as:

  Pre and Post Call Routing - Routing intelligence that is applied before the call is sent to the destination is referred to as pre-routing. Intelligent transferring between agent groups or into or out of VRU's is referred to as post call routing.

Skills Based Routing - Ability to route calls to a particular ACD group or agent based on predefined skill sets required to handle incoming call.

Additional Routing Based On:

- Dialed number
- Automatic Number Identification (ANI)
- Location of caller
- Caller entered digits
- Time of day, day of week
- Cost of call

- **Consolidated MIS Reporting** - Integrated near real time and historical call center and network management reporting for a true enterprise view and optimization.

4.3.3. Data Services

4.3.3.1. Overview

The contractor is expected to offer, at a minimum, the same level of data services as presently offered; Dedicated, Switched, and Frame Relay. Dedicated data services are essentially point-to-point dedicated bandwidth for a using agency.

Switched high speed (56KBPS and above) shall be provided through contractor transport facilities as well as dial into the network through ISDN service and obtain switched 56KBPS services for either data or video communications.

Frame Relay Services (FRS) shall provide for multiple types of support ranging from basic FRS using customer provided equipment, to total FRS support to include equipment provisioning, installation, and maintenance, depending on individual agency need. The service shall also provide for multiple levels of service availability ranging from 24 hour/7 day per week to standard 8:00 a.m. to 5:00 p.m., Monday - Friday service availability. Existing agency networks will be migrated to this service, and all new frame relay service will be obtained via this service.

4.3.3.2. Data Services Survey Results

DGS/TD tasked a consulting firm to conduct a survey of the major data users in the state. In spite of the diversity in missions, operations, and infrastructures of the departments surveyed, a number of common themes or requirements surfaced in the responses of agencies. The following summarizes the consultant's findings:

4.3.3.2.1.Application Types Supported

Respondents all discussed applications types in terms of the following categories:

- messaging
- transaction processing
- file transfer
- file-sharing
- host-based processing from remote terminals
- client/server applications
- Web site access
- Internet access

No obvious patterns emerged from the responses, save a significant amount of electronic messaging traffic in almost all responding agencies. Other significant traffic (20% or greater in at least two agencies) included: transaction processing (2 agencies), host-based processing (3 agencies), client/server applications (3 agencies), and miscellaneous or unspecified traffic (2 agencies).

4.3.3.2.2.Protocols Supported

Some agencies have operational frame relay networks which are undergoing expansion. Almost all agencies had leased point-to-point circuits (typically T1 and 56 Kbps) between major nodes and several hundred minor nodes around each major node. No obvious pattern was discernible, other than the presence of high speed links between major cities.

4.3.3.2.3.Network Management

Agency responses differed on details but were consistent on many major points. Most respondents indicated a need for regular and comprehensive management reports, including reports on traffic patterns, circuit utilization, fault detection and diagnosis, and maintenance. Some respondents indicated additional detail, specifying near real-time circuit utilization display, trouble ticket tracking, order tracking, inventory reporting, and historical and trend reports. Agencies clearly wanted to have detailed management information available, regardless of who actually administered the network.

With respect to in-house requirements, agency responses again varied. Some agencies specified a set of functions which would effectively cause them to operate a private network (e.g. dynamic load balancing, router configuration and management, trouble-shooting). Other agencies were more flexible, primarily reserving for themselves final approval authority on network design, planning, and modification.

4.3.3.2.4.Security

There is a need for stringent security standards, based upon the transmission of confidential or sensitive data. However, only one agency appeared to transmit data whose compromise could be threatening to human life. Most security requirements were based upon the potential for fraud or disruption of State services if either a physical network or transmitted data were compromised. One agency discussed some specific needs, which included firewalls and encrypted channels.

4.3.3.2.5.Disaster Recovery and Emergency Operations

Of the responding agencies, two had direct roles in protecting public safety and repairing the State's infrastructure in the event of a disaster or emergency (CalTrans and California Highway Patrol); four agencies indicated a significant role in post-disaster recovery (Employment Development Department, Department of Consumer Affairs, California Department of Insurance, and Department of Motor Vehicles); one agency played a supporting role during disaster or emergency operations (Department of Motor Vehicles); and two agencies indicated mission-critical needs to maintain network availability during disasters or emergencies (California Department of Corrections and Department of Mental Health). Only agencies whose role was post-disaster recovery indicated a tolerance for a brief period of network unavailability during a disaster.

4.3.3.2.6.Fault Recovery

Massive redundancy, rapid failure detection, and rapid recovery were cited as essential characteristics by all agencies. Only two agencies indicated a tolerance for retransmission of administrative traffic that is delayed as a result of network failure. Four agencies explicitly stated a

requirement for fully redundant, guaranteed 7X24 operation. Other agencies specified varying requirements for fault detection and recovery and for network availability.

4.3.3.2.7.Billing Systems

There is a need for a clear, timely, and user-friendly billing statement. Desired features included:

- Delivery by 15th of the month following the billed month.
- Invoice breakdown by divisions, offices, accounting centers, nodes, or circuits within the department (availability of both consolidated and separate invoices).
- Comprehensive billing analysis functions including sorting, summarizing down to individual circuits, PVC's or SVC's.
- Legends explaining all codes and line items.
- Support for customized reports.
- Automatic internal bill-back.
- Availability of invoices in electronic form (on CD-ROM or other suitable media).

In addition, regular audits, and procedures for rapid resolution of billing disputes were both cited as important components of the overall invoice process.

4.3.3.2.8.Customer Service

Agencies emphasized the need for a 7X24 help desk staffed by concerned and qualified personnel. Other required customer services included:

- Support for a full range of transport services.
- Support for a full range of service classes.
- Support for a full-range of access speeds.
- Option to monitor routers, CSU/DSU's.
- Option for full-service router consulting at a fixed fee.
- Option for turnkey interconnection services.
- Available consulting and network planning services.
- Trouble call tracking with rapid resolution and confirmation call to customer.

4.3.3.2.9.Public Access and Electronic Provision of Service

Four agencies expressed requirements for publicly accessible Web servers or Internet access for authorized employees. The Department of Consumer Affairs cited plans to provide public services electronically – but on a separate network from the State's internal network. The Department of Motor Vehicles cited requirements to provide electronic services to citizens, motor vehicle dealerships, and financial institutions, with a willingness to use an appropriately configured and secured State network.

4.3.3.2.10.Conclusion

The respondents to the survey indicated many common themes. In particular, no responding agency expressed unusual or unique requirements. The common themes tended to endorse a view that many agency requirements were shared and that a consolidated structure could serve many organizations with diverse missions.

4.3.4. Other Services

4.3.4.1.Building Wiring

The contractor shall offer building wiring support services in all customer office buildings. Clients requesting additions or changes to local service shall have the option to use the contractor to install the necessary building wiring, connect the telephone instrument and test the service. The contractor shall also provide services for extensive rewiring of buildings to support agencies' growing demand for enhanced information technology infrastructure.

The contractor will be expected to install wiring to acceptable standards in affect at the time of installation. The contractor shall also provide a set of standard installation intervals for service types. These intervals will be published and the contractor will be expected to meet or better those intervals when installing service.

4.3.4.2.Fiber Facilities

State agencies use the DGS/TD fiber facilities to meet their unique requirements from video services, to alarm systems, to environmental controls. The contractor shall continue to provide and maintain fiber services for agency use. The contractor is expected to assume ownership of the existing fiber facilities and continue to support agency requirements for the service.

4.3.4.3. Outside Plant

DGS/TD owns conduit structures in Los Angeles, San Francisco, and Sacramento as described in Section 3. The structure in Sacramento is extensive and used for services other than just telephone access. DGS/TD also uses a part of the heating and cooling tunnels in Sacramento to distribute telephone and data facilities. DGS/TD is in a position to include the conduit structure as a part of any eventual RFP. However, the heating and cooling system tunnels are not included. If ownership of the conduit structure transfers from DGS/TD, the contractor must recognize the need of existing state users for access to the conduit and be prepared to accommodate the requests. Examples of such requirements include video service, alarm services, LAN services, and environmental control circuits.

4.3.4.4. Information Services

The contractor shall provide three levels of information services.

4.3.4.4.1. General Telephone Information

The first level is general telephone information to the public. Callers may ask for the telephone number of a specific state employee or state agency. If the information is in the state directory it shall be provided to the calling party.

4.3.4.4.2. General State Information

The second level is general state information. Callers shall query for specific state agency telephone numbers based on a general description of the state government services they are requesting. The contractor is required to fully understand the state government services provided and match the service with the callers inquiry. There shall be no charge to the calling party for these services.

4.3.4.4.3. Telephone Directory

The last level of information service is the published state telephone directory. Annually, the contractor must publish a directory with a list of the agencies and departments with key staff names and telephone numbers. The directory shall include a listing of key state employees by alphabetical listing with their associated department and telephone number. The contractor shall include Internet addresses as a part of the directory listing. The charge for

the directory is billed to agencies based on the number of directories they order.

4.3.4.5.Public Access Telephone Service (Pay Telephone)

The current regulatory and legislative environment encourages DGS/TD to manage pay telephone concession services through a separately bid contract outside of this current process.

4.4. Assumption of CALNET Assets and Debt

DGS/TD purchased the existing California Integrated Telecommunications Network, commonly known as CALNET, through a competitive bid process which resulted in an installment purchase and service contract. The network was purchased in two phases identified as Phase 1 and Final Phase. GTE Leasing is providing the financing to DGS/TD for both phases. The terms of the existing contract allow the remaining balances to be paid off without penalty, however the balances cannot be assumed by a third party. It is DGS/TD's intention that any future contract award will relieve DGS/TD of the obligation for these debts.

4.4.1. Phase 1

The first phase, which consisted of the Class 4/5 switches, digital cross connects, CSU/DSU's, channel banks, M13 multiplexers, fiber multiplexers, power systems, building modifications, project management, data fill, training and inside/outside cable plant, was purchased for $27,801,068. After an initial lump sum payment of $2,613,369, the remaining principal balance of $25,187,699 was financed over a 10 year period. Payments began in July 1992. The remaining unpaid balance on December 1, 1997 will be $14,763,009.

4.4.2. Final Phase

The final phase consisted of upgrades to the Class 4/5 switches for ISDN, SS7, and CLASS features. It also include a sophisticated Network Management System with associated alarm, control and building security access systems, project management services and training. The purchase price was $6,916,833. After an initial lump sum payment of $416,833, the remaining principal balance of $6,500,000 was financed over 10.5 years with accrued interest for the first six months. The payments began in July 1996. The remaining unpaid balance on December 1, 1997 will be $6,094,354.

4.4.3. SCIP Moves

The contractor chosen as a result of any future RFP will be required to move the CALNET SCIPs in both Los Angeles and San Francisco from their present locations. The equipment in the San Francisco SCIP must be

removed from that location by the first quarter FY 1999/2000. The equipment in the Los Angeles SCIP must be removed from that location by the second quarter FY 1999/2000. DGS/TD has alternative state sites reserved for both SCIPs. The successful contractor may choose to use these sites at a negotiated lease rate, or remove the equipment totally from state premises.

4.4.4. Lease Back of State Property

The equipment at the major, minor and hybrid SCIPs are located on state property. DGS/TD is agreeable to lease the space to a contractor at a fair market rate as a condition of sale in any future RFP. This will allow the contractor to continue to operate the equipment in its present location (except the sites in Los Angeles and San Francisco as mentioned in 4.4.3).

4.5. End User Terminal Equipment

The contractor shall maintain the current level of service compatibility to end user terminal equipment. The service cutover from the current environment to the proposed network shall be transparent to the end user agency terminal equipment. The proposed network shall not require modifications to the existing terminal equipment.

DGS/TD recognizes that some customers use proprietary equipment on both the CALDEX and Centrex services (See Section 3.1.5.2.3). Users with the proprietary equipment will have to be accommodated in this new environment at no additional cost. The successful contractor must either make the existing equipment work in the new environment or replace it with equipment of similar quality that will function essentially the same as the proprietary equipment. DGS/TD and the affected users will be the approving authority for replacing the proprietary equipment. This includes any necessary equipment, building modifications, wiring, and training for user staff.

For Frame Relay Services the state shall request the contractor to provide an option for agencies to obtain the necessary Customer Premise Equipment (CPE), required to support FRS .

4.6. End User Support

This Section outlines the planned support function of the contractor and DGS/TD for activities related to State agency acquisition of telecommunications services as defined in this RFI.

4.6.1. General

The use of the term; "defined contracted services*"* in this document presumes the services provided through the contract will have been approved (contracted) with individual pricing and feature definition. Therefore, additional service items not specifically itemized, priced and

defined must be submitted to DGS/TD for review and inclusion in the contract with specific pricing and service definition.

As previously defined in Section 3, DGS/TD will continue to oversee the use of the contract by end users. DGS/TD may delegate to agencies the authority to submit requests for certain services directly to the contractor. DGS/TD may also designate some services as non-delegated and require DGS/TD review and approval prior to agency acquisition. DGS/TD will use contractor provided management reports and periodic random agency audits to monitor and administer contract usage for delegated services.

4.6.1.1.DGS/TD Activities

The DGS/TD has broad oversight for state telecommunications. In this role the focus is on telecommunications activities that provide business oversight with emphasis on statewide "economy of scale" impact. Among these activities are:

- Expertise in, and monitoring of, market trends in order to advise state agencies.
- Strong focus on customer needs and knowledge of state agency operational requirements in order to plan for appropriate telecommunications services. This includes consulting assistance to agency staff for support and guidance in the acquisition of telecommunications goods and services.
- A strong customer advocate role to ensure that the state's telecommunications providers continuously provide responsive service to state agencies.
- Ongoing monitoring of contractor performance and customer satisfaction.
- Periodic monitoring of best available industry pricing.
- Expertise in industry-wide trends and best practices in order to provide consulting service to state agencies.
- Expertise to assess operational requirements of state agencies to ensure elimination of operational redundancies and duplication of effort between state agencies.
- Contract management to monitor (and audit) adherence to and effectiveness of the state telecommunications contracts.
- Monitoring of telecommunications law, technology, and market trends in anticipation of subsequent contract development and procurement awards.
- Provide administrative management for contract, policies, directives, standards, and augmentation of new services.

- Review and comment to the DOIT in response to agency requests for approval of exemptions to existing direction.
- Perform as client agency advocate to ensure the contractor provides effective response to agency requests as stipulated in the contract.
- Respond to service issues beyond the scope of the contract.
- Perform periodic audits of agency bills to ensure accuracy based on the terms and conditions of the contract and to ensure cost effectiveness of service selection for agency application.

4.6.1.2.Contractor Activities

As associated with the defined contracted services, the contractor shall:

- Provide staff to perform as the principal technical resource for information on pricing, features, and feature interactions/restrictions. This technical staff shall be available on demand by telephone and to participate in meetings to answer questions about these contracted services. These inquiries may be addressed without an order or Telecommunications Service Request (STD. 20) form.
- Provide documentation on pricing, features, and feature interactions/restrictions.
- Use DGS/TD provided database of Agency Telecommunications Representatives (ATRs) as designated by the agencies to have fiscal authority to order service.

4.6.2. Planning

4.6.2.1.DGS/TD Activities

As associated with the defined contracted services, the DGS/TD shall:

- Respond to planning issues beyond the scope of the contract.
- Review and approve non-delegated service project plans developed by the contractor.

4.6.2.2.Contractor Activities

As associated with the defined contracted services, the contractor shall:

- Perform overall planning coordination activities related to service implementation.

- Provide end user station reviews to optimize the structure and implementation planning detail for selected contract services.
- Provide, and update as necessary, a project plan detailing all resources (cost, staff, etc.), scope (tasks), and scheduling (with constraints) necessary to implement service.
- Provide information to the agency regarding proprietary equipment that interfaces with enhanced services and must be purchased separately.

4.6.3. Design

4.6.3.1.DGS/TD Activities

As associated with the defined contracted services, DGS/TD shall:

- Respond to design issues beyond the scope of the contract.
- Review and approve non-delegated service project design documentation developed by the contractor.

4.6.3.2.Contractor Activities

As associated with the defined contracted services, the contractor shall:

- Collect data and conduct end user station reviews and complete associated service request documents.
- Provide design recommendations and critical feature interactions with documentation to the agency for review.
- Analyze agency service request and determine facility requirements.
- Determine network interconnection requirements of service request.
- Determine the required functions to perform transmission, distribution, and switching.
- Determine required network management applications and interface requirements.

4.6.4. Provisioning and Implementation

Client placement of service orders through electronic means, or direct client provisioning of line, trunk, or similar services are expected. The DGS/TD would expect that, with the exception of client premise wiring plant and equipment installation work, direct client provisioning would be near instantaneous. It would be desirable if client posted electronic

service orders are processed on a less than one-day cycle, unless client premise wiring plant or equipment installation work is involved.

4.6.4.1.DGS/TD Activities

As associated with the defined contracted services, the DGS/TD shall:

- Respond to issues beyond the scope of the contract.
- Monitor ongoing facility provisioning and implementation and prepare management forecast planning evaluations and reports.
- Review and approve non-delegated services project provisioning and implementation documentation developed by the contractor.

4.6.4.2.Contractor Activities

As associated with the defined contracted services, the contractor shall:

- Provide the state with a means to initiate near real time provisioning of service if requested. For the interest of this RFI, near real time shall allow for delays in transmitting and processing of the request. The request must not be held for future processing.
- Perform all activities associated with the receipt, logging, task identification, scheduling, and completion notification of agency service requests (STD. 20).
- Perform these service order/completion functions via relational database programs.
- Develop, enter data, and maintain an inventory of agency services and line assignments within the proposed relational database programs.
- Provide an electronic means of receiving valid service orders from authorized end-users
- Provide a means to validate that the end user is authorized to initiate a service request based on the current ATR master file.
- Provide a positive acknowledgment of receipt of a valid end-user service request.
- Provide status information to end-users on the progress of service requests initiated by the user.

- Provide DGS/TD with service implementation management reports that include at a minimum a listing of requests and the implementation interval for each request.
- Define the necessary interface requirements for existing end-user CPE to connect to the contractor provided services.
- Perform a site inspection of user location prior to implementation of service to ensure there is an adequate environment for the new service.
- Coordinate the service installation with the identified end-user contact. This includes schedule, host, coordinate, and document minutes of coordination meetings as appropriate.
- Establish and publish standard service implementation intervals for end-user planning.
- Develop engineering design standards for contractor use of existing state assets where applicable.
- Develop comprehensive implementation plans and schedules that minimize disruption of the current end-user's telecommunications system.
- Prepare a site preparation plan that specifies requirements for space, power, air conditioning, humidity control, floor loading, dimensions equipment, and any other special requirements necessary for the provision of service in an end-user location.
- Prepare a service acceptance plan that specifies requirements for functional testing, load testing, and cut over testing of contractor provided services.
- Prepare or obtain floor plan(s) showing jack locations and jack numbers (if available) and identify the "Primary Directory Number" next to the appropriate jack location on the floor plan(s).
- Provide DGS/TD staff access to the proposed relational database programs for service activity monitoring and development of agency profiles.

4.7. Marketing Services

There is clear benefit to DGS/TD and the contractor to employ industry accepted marketing practices to inform agencies of the availability and benefits of contracted services. In order to provide the contractor with market opportunities while satisfying DGS/TD's management responsibilities, the contractor will submit for approval, a marketing plan that will include as a minimum the following elements:

- Provisions that contract marketing activities will be limited to currently approved contracted services.
- Provisions that the contractor will not attempt to sell non-contracted services or equipment in direct competition with other services offered by DGS/TD.
- Provision for adherence to guidelines established by DGS/TD with the contractor's input for marketing activities.
- Provision for ensuring marketing brochures and materials for contracted services are approved by DGS/TD prior to distribution.
- Provision for monthly reports on customer contact and contract usage for state and local government.
- Provisions for establishing a forum for joint contractor and DGS/TD market planning.

4.8. Training

4.8.1. User Training

The contractor is to offer client service use training as part of the service order and standard service provisioning process. This training shall be offered at the client premises, or optionally the client may choose to utilize off-site training, audio-visual training packets, personal computer based training, or other arranged opportunities. In addition to individual user training the clients may request training that will enable their own on-site user training programs, or train staff for administration of ACD, MIS, Voice Mail, or other similar enhanced services.

4.8.2. General Telecommunications Training

DGS/TD desires to use this contract as one of several means of preparing and maintaining DGS/TD and other state agency staff skills in general telecommunications technical and related business matters. The State desires access to contractor staff training processes and training classes. DGS/TD is additionally interested in exploring the possibility of having selected contractor staff in various skill areas working on assignment on-site with DGS/TD staff for arranged periods of time. It is expected the assigned contractor staff would be functioning within State responsibilities and liabilities in the context of actual work functions. DGS/TD is also interested in exploring the possibility of similarly assigning staff for defined periods of time in the contractor environment in the context of actual work functions or similar to apprenticeship like programs.

4.9. Network Operation, Maintenance and Management

4.9.1. General

DGS/TD envisions service provisioning, network operation, maintenance, and client billing by the contractor for all services without direct State staff involvement. DGS/TD envisions its role in these processes to be strongly proactive in overseeing outcomes and results.

4.9.2. Client Representation

DGS/TD intends to actively represent clients in resolving issues of business transactions and service performances.

4.9.3. Contractor Oversight

DGS/TD intends to actively oversee contracted service deliverables, associated fiscal transactions, and general contract compliance.

4.9.4. Information Access

DGS/TD expects the contractor to provide oversight and management information access sufficient to allow DGS/TD to meet its responsibilities, including the ability to independently validate contractor provided service performance and fiscal management information. The information access is expected to involve both historic electronic data and near real time service status. The state recognizes the delays in receiving status information and processing the information for display. This is expected to be no more than a few seconds from time of occurrence.

4.10. Invoicing Services

The contractor will be expected to render individual bills directly to any agency authorized use of the contract by DGS/TD. The contractor's billing system should offer at a minimum the following options:

- Flexible billing cycles
- Hierarchy-based invoicing
- Reference on invoice to State's service request (STD. 20) number for related order activity
- Usage call detail reporting
- Itemized listing of monthly recurring services
- Summary reporting
- Magnetic media options for obtaining bill detail
- Software program for billing data analysis and management reporting

- Ability to accommodate new services

DGS/TD desires that all usage based services be billed in six second increments or less with no more than an 18 second initial period.

The contractor's network must have answer supervision for accurate detection of "answer" or "off-hook" condition for generation of valid billing record.

The contractor shall be required to provide customers with the option to receive monthly billing for contracted services and to pay contractor invoices via electronic transmission following the American National Standards Institute (ANSI) ASCX 12 standard format for telecommunications invoicing.

DGS/TD shall require that invoices for all contracted services, that are less than 90 days in arrears, not be subject to late payment charges.

The State shall not be subject to monthly minimum usage charges for any contracted service.

On behalf of DGS/TD, the contractor will bill and collect a contract administrative fee (rate(s) to determined by DGS/TD) on all contracted services. This fee shall be included within the amount charged to those agencies obtaining service pursuant to the contract. The contractor shall remit a check based on the revenue collected for this administrative fee to DGS/TD on a monthly basis at no additional cost to DGS/TD.

The contractor shall provide a toll free number for contracted services billing related questions and/or adjustments. Contractor staff responding to this toll free number shall be fully familiar with the contracted service rates and applicable terms and conditions of the contract to effectively respond to customer billing inquiries.

DGS/TD shall require contractor's to provide fraud detection, prompt client notification and corrective action programs to reduce the state's vulnerability to fraudulent activities. The contractor would also be expected to offer a program to assist agencies with identifying suspect calling patterns that may constitute abuse or improper use of state telecommunications services.

By State Administrative Manual policy, agencies are required to retain records until an audit or for four years whichever comes first. Therefore, there may be times when it is necessary for agencies to request duplicate copies of bills and supporting billing detail for as much as four years in arrears.

Under certain special conditions, state auditing and/or investigative agencies (i.e.; Bureau of State Audits, Department of Justice, court orders, etc.) may need to acquire copies of billing records directly from the contractor without the billed state agency's authorization and/or knowledge. Contractors will be expected to comply with these requirements.

4.11. State Management and Oversight

4.11.1.Contractor Provisioning Performance

Contractor provisioning performance will be evaluated based on, including but not limited to, the following:

4.11.1.1.Voice Services

- Routine orders submitted for contractor processing that involve less than 48 lines or 24 business sets, and not involving site work, shall be completed by the end of the next business day. This includes ISDN and Switched 56 KBPS services.
- Routine new 800/888 service orders submitted for contractor processing shall be completed by the end of the next business day.
- Routine Calling Card orders submitted for contractor processing shall be completed and resultant cards shipped within 5 business days.
- User on-line provisioning, where available and exclusive of site work, shall be implemented within 1 hour of posted changes and additions.

4.11.1.2.Site Work (MAC)

- Routine orders submitted for contractor action involving 48 Lines or less shall be completed within 3 business days or when requested by the agency, whichever is later. This activity shall run concurrent with the service provisioning activity
- Orders requesting expedited contractor action involving 48 lines or less shall be completed within 2 days, including holidays and week ends.

4.11.1.3.Voice Service Project Work

- All voice service provisioning that includes site cable additions, enhanced services (ACD, etc.), CPE installations, or exceeds the above defined scope and detail shall be handled as projects. The contractor shall make an initial response to a project level service request within 3 working days. This response is expected to either result in a quoted schedule for the actions, or to offer an appointment within 5 working days for planning the project detail.

4.11.1.4.Private Line Service

The required private line services provisioning response times from receipt of order are as follows:

- DS0/T1 private line service to Main Point of Entry (MPOE) demarc shall be completed within 10 working days or the agency requested date, whichever is later. Services ordered with authorized expedite charges shall be completed within 5 working days.

4.11.1.5.Private Line Service Project Work

- All private line services provisioning that includes site cable additions, enhanced services, CPE installations, or exceeds the above defined scope and detail shall be handled as projects. The contractor shall make an initial response to a project level service request within 3 working days. This response is expected to either result in a quoted schedule for the actions, or to offer an appointment within 5 working days for planning the project detail.

4.11.1.6.Performance Deficiencies

Exceeding the defined provisioning time intervals, or project agreement schedules, shall be classified as maintenance MTTR failures of either minor or major faults as defined below. These shall be subject to the appropriate service credits as a contractor consequence.

4.11.2.Contractor Fault Management Performance

Maintenance performance shall be associated with contract cost assessments as follows:

Response ---------- Fault Type	MTRR Benchmark	MTTR Benchmark	Contractor Consequence, MTTR failure
Minor	15 minutes	4 hours (5x8)	1 day service credit for exceeding MTTR, and 1 day service credit for each fractional day thereafter. See note.
Major	15 minutes	4 hours (7x24)	1 day service credit for exceeding MTTR, and 1 day for each fractional day thereafter. See note.
Cat 1	15 minutes	2 hours (7x24)	1 day service credit for exceeding MTTR, and 1 day for each MTTR fractional increment thereafter. See note.
Cat 2	10 minutes	30 minutes (7x24)	1 day service credit for exceeding MTTR, and 1 day for each MTTR fractional increment thereafter. See note.
Cat 3	5 minutes	15 minutes (7x24)	1 day service credit for exceeding MTTR, and 1 day for each MTTR fractional increment thereafter. See note.

Note: Service credits shall be issued to each affected user, and shall be calculated by application of service rates to the total quantity of impacted services, or to historically estimated usage as appropriate.

The definition of fault types and contractor responses are as follows:

- **Mean Time to Respond to Repairs (MTRR)** shall be defined as time required to respond back to a problem reporting client, or to DGS/TD for total service losses, with information on the corrective actions being taken, and the estimated time for restoration of service. When used as a maintenance performance benchmark MTRR shall be applicable to individual fault occurrences.

- **Mean Time To Repair (MTTR)** shall be defined as the time required to correct a fault or to fully restore service. When used as a maintenance performance benchmark MTTR shall be applicable to individual fault occurrences.
- **Minor** service failures shall be defined as the loss of a single service type to a single user at a site, or a failure of a single redundant component in a system.
- **Major** service failures shall be defined as a loss of multiple service types to a single user at a site, or the loss of a single service type to multiple users at a site.
- **The first level catastrophic failures (Cat 1)** shall be defined as the total loss of all services at a site or building complex, or the total failure of an Enhanced Service (ACD, etc.) at a site.
- **The second level catastrophic failure (Cat 2)** shall be defined as a total failure of a service type in a local service area.
- **The third level catastrophic failures (Cat 3)** shall be defined as the total loss of more than one service type in a local service area, or the loss of any service type on a system wide basis.

4.11.3. Contracted Service Performance

4.11.3.1. Voice Services

- Call completion percentage 99.9999%

  Call completion percentage shall depict the successful completion of attempted switch transactions.

- Grade of Service P.03

  Grade of service shall depict the non-busy destination station call completion.

- Dial Tone availability 99.9999%

  Dial tone availability shall depict the percentage of time dial tone is available within one second of off-hook condition.

- Maximum call setup time 3 seconds

  This is the time from the last digit dialed to the beginning of ringing at the destination central office.

4.11.3.2.Private Line Services

Private line data and video services shall comply with existing Bellcore and other industry standards that apply to the United States. In addition, the state is seeking:

- Percent availability 99.9998%

  This represents the total time services were performing to established parameters divided by the total possible time available.

- Fast restoration time < 300 ms

  This is the time from first detecting a service problem to the time service is restored to the established parameters.

4.11.3.3.Frame Relay Services

- The contractor must provide a **turn-key** Simple Network Management Protocol (SNMP) system. The SNMP system shall be capable of partitioning to allow limited access/view of network components to individual agencies.
- The contractor must provide network rerouting options for disaster recovery.
- The proposed FRS must meet a Committed Network Availability (CNA) of 99.95%.

4.11.4.Performance Deficiencies

Performance below the defined minimum requirements are service deficiencies, and shall be classified as maintenance MTTR failures with associated contractor consequences in the applicable category of fault as defined above.

4.11.5.Contract Service Availability

Continuing availability of contracted service offerings in the full range of defined features and service performance requirements is a condition of contract. Any service not fully available may be procured by the users through any available procurement alternative, and the contractor shall provide compensation for any service costs that exceed those provided for in the contract. Additionally, the contractor shall compensate DGS/TD for added administrative efforts in the amount calculated by application of established administrative fee schedules to the alternative service compensation payments.

4.11.6.Client Advocacy

DGS/TD desires to maintain a client advocate function involving provisioning as well as ongoing client and network service delivery. In the provisioning area, DGS/TD will wish to directly access service order details and order processing status and schedules. In the service or network trouble area, DGS/TD will wish to access records on the reported client or network troubles, and have access to contractor corrective activity plans and schedules. This is expected to be similar to access to the contractors trouble reporting and problem management systems. It is expected that specific State activities as an advocate may be evoked by client request, contractor request, or as a result of service and process monitoring. In support of these areas, DGS/TD will wish to have enhanced communication and coordination capabilities with responsible contractor staff at levels beyond normal trouble reporting and initial order submittal processing.

4.11.6.1.Service Evaluations

DGS/TD wishes to continue proactive and substantial interaction with clients to evaluate both technical performances and levels of service experienced with contracted services. The specific topical areas to be discussed with clients may include, but are not limited to, the following:

- Identifiable issues of quality
- Specific problems
- General levels of service
- Needs for business-enabling changes to be considered in the planning and management of contracted services.

4.11.6.2.Client Problem Escalation

DGS/TD wishes to continue assisting clients in escalating solutions to significant and difficult problems of service or provisioning outside of expected problem resolution parameters. To facilitate this function, required contractor's support will include, but not limited be to, the following:

- Providing technical analysis of significant and difficult problems of service or provisioning.
- Coordinating utilization of established contractor and assigned State resources outside of processes and procedures normally available to clients.
- Providing an escalation list with contact alternatives that will be available seven days a week, twenty-four hours a day.

4.11.6.3.Client Service Information

DGS/TD plans to continue providing clients with information regarding contracted services. This information may include, but is not limited to, the following:

- Service order status
- Available service types and rates
- Guidance on proper use of service features
- State contact referrals for services not routinely available by contract

4.11.7.Fiscal Management

The DGS/TD will exercise contract oversight and management to ensure that the contractor is providing contracted services to agencies according to the terms and conditions of the applicable contract as well as to validate projected cost/benefit to the state.

This oversight and management shall include, but not be limited to the following:

- Monitoring agency use of the contract and adherence to established policies/directives
- Reconciling anticipated administrative fee revenues with contractor monthly checks
- Performing cost recovery analysis and adjusting administrative fee rate(s) as necessary
- Performing periodic audit of agency invoices and service requests to verify accuracy of applied charges and effective use and application of service offerings to maximize cost effectiveness

The contractor shall provide to DGS/TD summary reports identifying all services implemented under the contract. The reports shall provide, at a minimum, service period, identification of service type, quantity, total recurring revenue, total non-recurring revenue, applicable administrative fee rate, and total administrative fee collected. It is anticipated that the reports will be provided on a monthly basis.

The contractor shall also provide monthly summary reports identifying all services implemented under the contract for an individual agency/customer. These reports shall contain the name of the agency/customer, service period, type of service, quantity, total recurring charges and total non-recurring charges (if applicable).

The identified management reports shall be delivered to DGS/TD by electronic means.

Prior to award of contract, the contractor shall demonstrate their ability to generate agency bills based on custom contracted rates, including administrative fee and to also produce the required DGS/TD management reports.

As part of our agency auditing activities, the contractor may be requested to supply a copy of any agency bill and supporting detail in electronic format to DGS/TD without prior agency authorization.

4.11.8. Management Tools for Access

DGS/TD desires to use this contract as the means of intrinsically acquiring, installing, supporting, and maintaining all the electronic hardware and software required for accessing and processing of information necessary to perform the intended service oversight, client advocacy, and fiscal management functions. There are number of ways this capability can be provided to State staff. The access and process resources could be independently provided as stand alone direct accesses and functions sufficient to support necessary concurrent State staff use, or could be provided as an interface to the existing State owned and operated LAN and workstation environment.

4.11.9. Cost Reduction Plan

DGS/TD recognizes that the information technology marketplace is a very competitive environment. Rates continue to drop as features continue to expand. The contractor is expected to participate with DGS/TD in an annual review of market rates and features to ensure the state is receiving the best cost performance from the services available. The contractor's performance will be measured and evaluated on their ability to deliver a cost competitive service to the state throughout the term of the contract.

4.12. Implementation Strategy

The contractor will be required to develop an implementation strategy that will assume the existing CALNET debt, migrate users to the new service, and reduce state costs as soon as possible. DGS/TD has no additional funds to pay for the conversion. The entire implementation process must take place at no additional cost to the state, and remain transparent to the end user of the service including maintaining existing user telephone numbers. The contractor's plan must address all of these issues.

DGS/TD will review the implementation plan with the contractor and jointly approve the plan. The plan must include specific timeframes for the conversion by location and service type.